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• **Rao, Ramana B.**
San Francisco, CA 94112 (US)

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(74) Representative: **Reynolds, Julian David et al**
Rank Xerox Ltd
Patent Department
Parkway
Marlow Buckinghamshire SL7 1YL (GB)

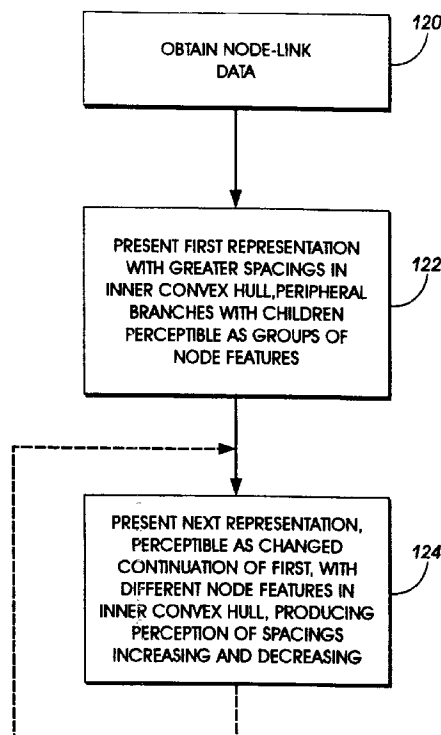
(71) Applicant: **XEROX CORPORATION**
Rochester New York 14644 (US)

(72) Inventors:
• **Lamping, John O.**
Los Altos, CA 94024 (US)

(54) **Displaying node-link structure with region of greater spacings and peripheral branches**

(57) Node-link data defining a node-link structure are obtained (120) and used to present a sequence of representations on a display, including a first representation (122) and one or more subsequent representations (124) up to the last. The last representation in the sequence is perceptible as a changed continuation of the first. Each representation includes bounded node features, each with a center of area and a nearest node spacing that define a mid-spacing circle. All mid-spacing circles together determine an outer convex hull enclosing a total area for the representation. The mid-spacing circles of a subset of more spaced node features determine an inner convex hull enclosing approximately half the total area and enclosing a region in which nearest node spacings are in general perceptibly greater than in another region outside the second convex hull. The node features also represent a peripheral branch with lower level nodes that are not represented by more spaced node features. In the peripheral branch, node features that share a parent have centers of area positioned approximately along an arc with sufficiently similar spacings from the center of area of the parent node feature and from adjacent node features that they are perceptible as a group of related node features. The inner convex hulls of the first and last representations include subsets of node features representing different sets of nodes. The sequence can produce a perception that one node feature's nearest node spacing increases while another's decreases. The representations can be presented by a series of iterations, and can be present-

ed at animation speeds to produce a perception of continuously moving node features.

**FIG. 3**



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EUROPEAN SEARCH REPORT

Application Number
EP 95 30 6316

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	CHI '92 CONFERENCE PROCEEDINGS. ACM CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS. STRIKING A BALANCE, PROCEEDINGS OF 1992 CONFERENCE ON HUMAN FACTORS IN COMPUTER SYSTEMS, MONTEREY, CA, USA, 3-7 MAY 1992, ISBN 0-89791-513-5, 1992, NEW YORK, NY, USA, ACM PRESS, USA, pages 369-370, XP002002409 JOHNSON B: "TreeViz: treemap visualization of hierarchically structured information" * the whole document *	1,2,5, 7-9	G06T15/00 G06T11/20
Y	COMMUNICATIONS OF THE ACM, APRIL 1993, USA, vol. 36, no. 4, ISSN 0001-0782, pages 56-57, XP002002410 ROBERTSON G G ET AL: "Information visualization using 3D interactive animation" * paragraph: "information Visualization"* * figures 5-10 *	1,2,5, 7-9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
A	EP-A-0 535 986 (XEROX CORP) 7 April 1993 * column 7, line 7 - column 8, line 3; figure 1 *	1-10	G06T
A	ACM TRANSACTIONS ON INFORMATION SYSTEMS, JULY 1993, USA, vol. 11, no. 3, ISSN 1046-8188, pages 266-286, XP002002411 KOIKE H: "The role of another spatial dimension in software visualization" * page 279, paragraph 5.2; figure 15 *	1	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 7 May 1996	Examiner Perez Molina, E
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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